BOOMER
FURNACES

THE HESS SNYDER CO.

CATALOGUE No. 28A

BOOMER FURNACES

The Hess-Snyder Company

South Erie Street, Massillon, Ohio

ESTABLISHED 1874

Frontage on Erie Street, 660 feet, Depth 143 feet, Nearly All Solidly Built. Our Plant is Not the Largest in the World, but We are Not Excelled in Equipment, Enabling Us to Turn Out Goods of Superior Quality, with Dispatch at Bottom Prices.

We also manufacture:

Plain and Friction Clutch Pulleys, Couplings, Hangers, Boxes, etc.

Boomer Cannon Stoves. Novelty Pumps.

Catalogue for above will be mailed upon application.

Headquarters for Jobbing in Castings; Machine, Sheet Steel and Pattern Work

Trade Mark "NOVELTY" Registered—No. 70078.

Trade Mark "BOOMER" Registered—No. 58228.

Terms

1. All bills are due sixty days from date of invoice, less two per cent cash discount if paid in ten days from date of invoice F. O. B. Massillon, O. Interest charged on all accounts not paid at maturity. All bills for repairs are net cash.

2. All time bills not paid at maturity, to be settled by note with interest.

3. Claims for reduction must be made within ten days from receipt of goods.

Prices and Discounts

List prices and discounts will be cheerfully quoted on application.

Prices subject to change without notification.

We do not allow freight for the reason that nothing is figured in our cost for this item, and any one offering to make this allowance must necessarily add the freight to the cost of the goods.

Our Responsibility

Our responsibility as shippers ceases on delivery of goods in good order to carrier, and mailing receipt therefor to consignee; and the carrier alone is responsible to the consignee for all damage sustained by breakage, shortage, or delay in transportation. Every assistance in our power will be cheerfully rendered to trace and recover lost goods and collect damages; but in no instance will the settlement of accounts be subject to the arrival, non-arrival, or damage of goods at their places of destination.

Do not refuse shipment on account of damage, but call the agent's attention to its condition, have him note it on the freight bill, then pay freight charges.

If agent will not accept claim, get his written refusal, send all the papers to us, and we will endeavor to collect for you.

Our Product

Our factory is equipped with the latest, up-to-date, labor-saving machinery, and we claim to produce, quality considered, as cheaply as it is possible to do so. To this cost we add only a fair profit, and on that basis offer our product.

Manufacturer, dealer and consumer are linked together; if we are successful with the celebrated line of Boomers and Noveltys, making them our exclusive business, why should not the dealer be equally successful, when he has the assurance that the words "BOOMER" and "NOVELTY" mean to us the very best that money and skill can produce.

The consumer, perhaps, does not understand what qualities stoves, furnaces and pumps must possess to be satisfactory, and almost invariably relies upon the dealer to give him value received. Is it possible for him to do so with goods that are light and cheap, their only commendable feature being the price?

We feel that it is unnecessary for us to enter into a lengthy discussion on the merits of Boomers and Noveltys, because we know that every dealer who has had any experience with them, realizes that they are of superior construction and weight.

In this volume we illustrate our entire line of Boomer Furnaces. We take considerable pride in our development as manufacturers, and believe that we are fully justified in our claim that our line compares favorably with that of any other manufacturer.

It has been our constant aim to improve our product to the highest point of excellence, and the continued patronage of old friends and customers, together with a constantly increasing new trade, convinces us that our efforts are, in some degree, successful and have been recognized.

We respectfully solicit your business.

How to Lay Out a System of Hot Air Heating in Dwellings

Multiply the outside length of building in feet, by the outside width, by the heights of ceilings, which gives cubical feet contents of building.

Select a Boomer Furnace of a rated capacity between minimum and maximum, that will correspond to the cubical feet contents of building.

Locate furnace in basement, as near the center of work required of it as possible.

For square inch capacity of hot air pipes to first floor rooms, two sides exposed, divide the cubical feet contents of such rooms by eighteen.

First floor rooms, one side exposed, divide the cubical feet contents by twenty.

For square inch capacity of riser pipes to second floor sleeping rooms, divide the cubical feet contents by sixty.

Second floor bath room, divide the cubical feet contents by twenty-five. See area in square inches of pipes and registers, page 37.

The sum total of all hot air pipe areas in square inches thus obtained, must balance the area in square inches of cold air duct.

Locate hot air registers in rooms, on inside walls, as close to the furnace as possible, and cold air face at a point where cold air will be drawn from all of the rooms, with the least draft across the floor.

Cold air can be introduced into the furnace, either under or above the cellar bottom, and cold air capacity should be same as warm air outlet.

For example, we refer to a house, the floor plans of which are shown on page 34.

Outside average length, 40 feet, width 26 feet, ceiling below 9 feet, above 8 feet.

40x26x17 feet equals 17,680 cubic feet, requiring a furnace rated at from 14,000 to 22,000 cubic feet capacity.

Parlor or Living Room, exposed two sides, 12½x17x9 feet, equals 1912 cubic feet, divided by 18 equals 106 square inches; use 12 inch pipe.

Sitting room or library exposed on one side, 16x17x9 feet, equals 2142 cubic feet, divided by 20 equals 107 square inches; use 12 inch pipe.

Dining room, exposed one side, 12½x13x9 feet, equals 1467 cubic feet, divided by 20 inches equals 73 square inches; use 10 inch pipe.

Hall, first floor, exposed two sides, 10x17x9 feet; hall second floor, exposed one side, 8x12x8 feet, equals 2298 cubic feet, divided by 20 equals 115 square inches; use 12 inch pipe.

Front bedroom, second floor, 13x15x8 feet; front bedroom, second floor, 10x11x8 feet; equals 2440 cubic feet, divided by 60 equals 41 square inches; use 3½x12 in. riser pipe, 9 in. cellar connection.

Rear bedroom, second floor, 12x13½x8 feet; rear bedroom, second floor, 13x13x8 feet equals 2648 cubic feet, divided by 60 equals 44 square inches; use 3½ x 12 in. riser pipe, 9 in. cellar connection.

Bath room, second floor, 5x9½x8 feet; equals 383 cubic feet, divided by 25 equals 16 square inches; use 3½x10 inch riser pipe, 8 inch cellar connection.

Total capacity of all rooms to be heated, 13,291 cubic feet; total pipe capacity, 502 square inches; requiring 26 inch diameter cold air pipe, 18x30 cold air duct, 18x30 to 26 inch round cold air stub.

For churches, school houses and store rooms, the foregoing rules will apply, except in determining the size of hot air pipes, for which use the following:

Churches, cubical feet contents of room, divide by 40, equals square inches pipe capacity.

School houses, first floor, cubical feet contents of room, divided by 30, equals square inches pipe capacity.

School houses, second floor, cubical feet contents of room, divided by 40, equals square inches pipe capacity.

Store rooms, first floor enclosed, cubical feet contents of room, divided by 40, equals square inches pipe capacity.

Store rooms, second floor enclosed, cubical feet contents of room, divided by 60, equals square inches pipe capacity.

In public buildings, where possible, we recommend hot air pipe to be taken directly off top of furnace, and cold air in accordance with the State Code.

Heating by Circulation

This signifies that the cold air is taken down off the floor and conducted up over the furnace back into the room. This method is generally used in churches, store rooms, and dwellings. School houses should always have the air taken from outside of the building.

Proper Residence Heating and Ventilating

There is always a tendency for the warm air in a building and the air outside to equalize through openings around the doors and windows, and when no air is brought into the building from any other source an equal amount of air passes in and out. A cold air register of the proper capacity placed in the floor of the hall or some other convenient place connected by a cold air box of the proper capacity into the bottom of the furnace of large capacity, and a generous supply of warm air discharged back again into the rooms through large pipes, makes the most satisfactory method of heating and ventilating a household.

Ventilation of Churches

Churches are generally heated and ventilated by circulation. The cold air is drawn off the floor at one or two places and carried down into the cold air box, then up through the warm air registers. A branch from this cold air box is quite frequently run to the outside, enabling the janitor to heat the church, using inside cold air until the congregation has assembled, and switching in the outside air during services.

School Houses Should be Ventilated Entirely by the Exhaust System

Cold air should always be taken from the outside of the building, passed over the furnace to be heated, discharged into the school room where it rises directly to the ceiling.

the foul air, or carbonic acid gas, being heavier than the heated air, drops to the floor. Brick ventilating flues, containing foul air registers close to the floor, are built side of smoke flues. The ventilating flue being warmed by the smoke flue causes a draft upward, and carries the foul air up over the roof. The size of these flues, pipes and registers, should be large enough to change the air in a room from two to four times an hour. This system is also becoming popular in the better class of churches now being built.

When figuring a heating system for either school house or church, we advise consulting the state law regulating ventilation.

How to Order a Boomer Furnace

In ordering a furnace, state whether wanted with or without casing. Be particular to give the number of furnace wanted. When nothing is said about casings, portable casings will invariably be sent with furnace. When casings are ordered with furnaces, state the size of the largest warm air pipe to be used, which determines the height of hood. If nothing is mentioned in order, hoods are always sent according to dimensions on page 38.

Regulator, check damper and poker furnished with every furnace.

When figuring a heating system for either school house or church, it is best to consult the State Code.

What qualities must a furnace possess to accomplish the greatest economy?

It must have the largest amount of radiating surface.

It must heat equally over all its surface.

It must not overheat the air when the cold air box and the warm air pipes of sufficient capacity are left open.

It must be the heaviest furnace, properly proportioned to produce equal expansion and contraction.

It must keep the fire in the furnace long enough to get the heat into the rooms and not discharge it into the chimney.

It must be so constructed that it can be filled with coal and allowed to burn quickly or slowly, at the will of the operator.

It must have joints that are properly made and proportioned to allow expansion and contraction and prevent any escape of dust, gas or smoke into the rooms.

It must have a mechanic to put it up who understands his business, who will use nothing but the best material, and will not leave the job unless everything is first class in every respect.

It must have an operator who knows how to run it according to directions sent with every furnace.

A Few Valuable Words to Agents

It is our desire that all appointed agents for the Boomer furnace should carry samples on their floors. We think it decidedly to your interest in a great many ways. In most cases where a sale is to be made, the party wishes to see what he is buying, while we claim that if a Boomer furnace is where it can be seen, a sale is much more easily made. We always advise a furnace to be set up as a sample with the casing left off. Our castings are so heavy and practically proportioned that it is worth anybody's time to take the furnace apart and thoroughly examine everything, after which an honest comparison can be made with other makes. We make these suggestions, feeling confident that after a thorough investigation by the party wanting to buy, your success in its sale is assured. We ask your careful perusal of this catalogue, in order to enlighten you on the Boomer furnace and its successful operations.

You certainly want to sell what the people want.

If you can save money by making a quick sale of a good article that recommends itself, is it not profitable for you to stay by it?

You are not through with a poor furnace after you have set it up.

The Boomer furnace is a success, and the number of unsolicited testimonials from all parts of the world, written by old experienced furnacemen and mechanics, is evidence that if you stand by the Boomer, it will stand by you.

Testimonials

"We had occasion today to inspect one of your furnaces which has been installed for 31 years and find this furnace in fairly good condition with the exception that the draft door has the hinges broken off and a new door is needed."

Almost every day we receive letters (testimonials) from Boomer agents and users of Boomer furnaces; the above being one recently received.

Heating Capacity

It is impossible to lay down any rule giving the correct heating capacity of a furnace, owing to the large variety of buildings, built of different material by different mechanics, in different climates and localities, some subject to more exposure than others. We think, however, the capacity of the Boomer furnace, registered in this catalogue, can be relied upon unless the building is uncommonly cold or exposed.

How to Prevent Clinkers

There is a refuse matter in all kinds of coal that cannot be burned. Part of this matter escapes out of the chimney, and the balance is either reduced to ashes or clinkers. If ashes are subjected to intense heat, they melt into clinkers. The smaller the furnace the hotter the fire must be to heat a given amount of space. When the Boomer hot blast is properly used, the intense heat is above the coal in the upper fire pot, consumption of the gases allows us to keep a moderate fire in the lower fire pot, and still get more heat with less coal than in the old way with a melting heat in the lower fire pot. Buy a large furnace, keep it well filled with coal, operate it to burn the gas in the upper fire pot, and clinkers will be few.

Quick Heat

If properly erected the Boomer Furnace will discharge heat from the register very quickly after the fire is lighted. Our radiators are far enough away from the intense heat for protection, and yet all the heat that has not been absorbed by the heavy cast iron must pass in and around the radiator before reaching the smoke pipe. It will readily be seen that if the heat is not allowed to escape into the chimney, it must come through the registers.

Regular Heat With Soft Coal

Heavy castings do not heat through as quickly as light ones, but they continue to give off heat after a light casting is cold. Soft coal burns more freely than hard, and with a good draft an intense heat can be made in a few minutes. The light casting will become overheated too quickly, become red hot and naturally overheat the air, while a heavy casting absorbs the heat and gradually gives it off. We have known the Boomer furnace to discharge heat from the registers after the fire had gone entirely out.

Construction

Our furnaces are built of the very best material throughout, on thoroughly scientific principles, embodying points of superiority and merit. The steel used in all Boomer radiators is Bessemer cold rolled of the very toughest kind, while we know, as experienced foundrymen, that our cast iron products are second to none under the straining power of heat. We have often been asked why we make our castings so heavy. As iron in its raw state is sold by the pound the world over, we certainly would be foolish to put more iron into a furnace than would be necessary for its strength and durability, since furnaces are not sold by the pound. We answer that since 1882 we have never been compelled to shut down for the want of orders, indicating that the people appreciate a good article and are satisfied with value received.

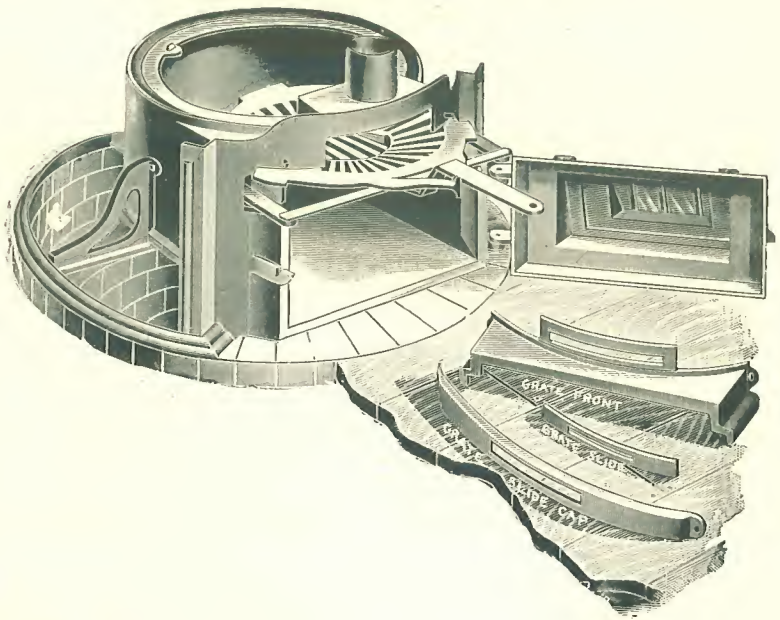
Radiating Surface

The words "radiating surface" imply all surface that radiates heat. A furnace may be large in diameter, have an enormous radiator, and yet be so made that a large portion of its surface does not become heated; therefore, has a large percentage of cold or inactive radiating surface, producing unequal expansion and contraction, and necessarily a short-lived furnace. It is easy enough to picture a large radiator entirely filled with heat with an opening at the bottom to receive the fire and smoke, and a smoke pipe leading from either the top or the side of the same chamber; but the question arises, how much of the heat is retained in the radiator when the smoke pipe is carrying it out at the top as fast as it enters at the bottom? Can a cistern be filled with water when there is a hole in the bottom as large as the inlet pipe? The Boomer furnace is so constructed that every inch of its radiating surface must come in contact with the flowing air to be heated, and every inch of its opposite surface must come in contact with the fire. When any part of the Boomer furnace is warm, it is equally warm all over its surface. A careful study of its construction will bear us out in these statements.

Radiating Surface of Nos. 73 and 503 Boomers

Radiator	Sq. Inches	Total Sq. Inches
Outside shell	2,904	
Inside shell	1,936	
Upper and lower heads	1,536	7,849
Clean out and smoke pipe collars	224	
Center gas dome and neck	1,249	
Upper Fire Pot		
Radiating wings	1,140	2,793
Main casting and chute	1,653	
Lower Fire Pot		
Radiating wings	460	2,013
Main casting	1,553	
Ash pit, complete		2,806
Grand total of Nos. 73 and 503 Boomers		15,461

Old Style Boomer Ash Pit

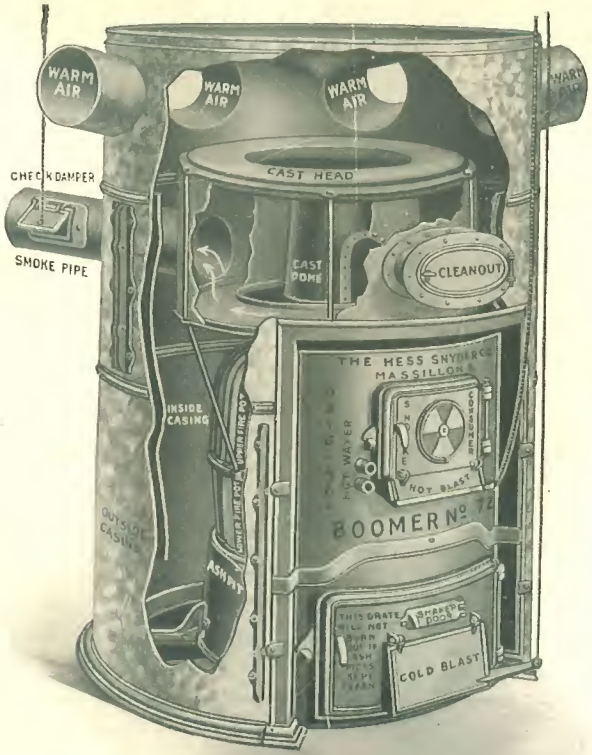


How to remove grate from old style ash pit of furnace

Take off large ash pit door. Unscrew one nut only on each end of grate slide cap. Take out bolt on each end of grate front (nuts on these bolts are inside of ash pit), after which the three pieces shown in cut can be taken off and entire grate and rest drawn out as shown above. When pieces are replaced, be careful to have joints well cemented and e ven, so ash pit door will fit nicely.

Boomer Furnace

Return flue radiator. Smoke, soot and gas consuming; saves 20 per cent in coal consumption.



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DETAILED INFORMATION

Numbers	Diameter Fire Pot From Center to Center	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
71	20 in.	40 in.	76 in.	56 in.	12,000 to 15,000	9x12 in.
72	23 in.	46 in.	76 in.	57 in.	15,000 to 25,000	9x13 in.
73	27 in.	52 in.	76 in.	58 in.	25,000 to 35,000	9x14¾ in.
071	20 in.	40 in.	66 in.	50 in.	9,000 to 12,000	9x12 in.
072	23 in.	46 in.	66 in.	50 in.	12,000 to 16,000	9x13 in.
073	27 in.	52 in.	66 in.	52 in.	16,000 to 24,000	9x14¾ in.

The 071-073 series are identically the same as the 71-73 except that the radiators of the 071 series are six inches lower than those of the 71 series.

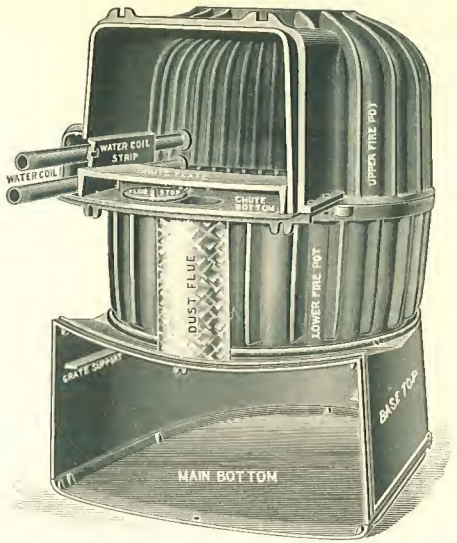
Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

For description of Boomer Radiator, see page 13; Grates, page 12; Casings, page 38; Hot Water Attachments, page 36; Fire Pots and Ash Pit, page 11.

Rules for laying out Heating System, page 4.

This furnace may also be used as a floor heater, price same as regular furnace.

Upper and Lower Fire Pots and Ash Pit



It is a well known fact that the fire pots in any furnace are subjected to the most severe heat, consequently should be made heavy and properly proportioned to be durable.

We invite careful inspection of fire pots in Boomer furnaces, because herein lies the secret of our phenomenal success, combining durable, economical and smoke burning qualities to a degree beyond comparison.

We have all the good features to be found in any fire pot, together with our new and patentable points, placing us distinctly in the lead.

The entire outer surface of fire pots are corrugated and covered with radiating wings, increasing their radiating surface and giving great strength to the castings.

In No. 72 size, there are 48 perpendicular semi-circular air passages in the fire pot, ½ inch deep, 1 inch wide, running from ash pit to radiator, which positively remain open at any stage of the fire, promoting combustion between the fire pots and the fuel, producing more heat with less fuel.

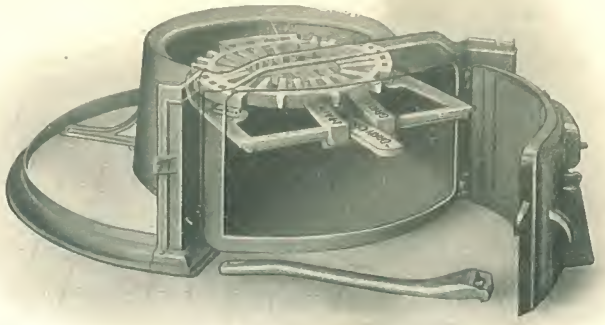
The Boomer can be fired in ordinary winter weather without shaking the grate more than four times a week. By this method ashes are as fine as powder.

In moderate weather, the furnace can be filled with coal and the hot blast door adjusted to suit the required amount of heat; an utter impossibility in the old method of getting air through the grate only.

An air passage in the bottom of chute, forces a hot blast directly into and over the fuel, ignites the smoke and gas before passing into radiator, and fills the radiator with flame instead of smoke, and throws off 20 per cent more heat.

Note that the feed door and ash pit openings are exceptionally large, admitting large chunks of coal and permitting easy removal of ashes.

Ash Pit and Grate



Showing Removal of Draw Center Grate

To remove grate from ash pit, open ash pit door, remove bolt in left hand front corner of grate rest, take hold of center grate bar, raise a trifle and pull out. To drop hard clinkers that no grate can grind up, open shaker door only, take hold of center grate bar with shaker, and pull out to the desired distance.

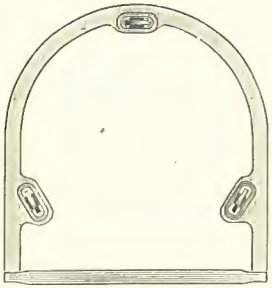
Dust flue, 4 inches diameter, carries dust and gas out of ash pit. when grate is shaken, the gas being consumed in the gas burner.

The reputation sustained by our anti-clinker shaking grate with draw center and roller bearings, as being the best for all kinds of soft coal, is disputed by no one. When shaken, it revolves around a common center, the outer edge traveling the farthest, removing ashes next to the fire pot first, allowing the hot coals to hug the radiating surface, and admitting air or oxygen at the point where combustion should take place. The entire grate and rest can be removed without disturbing the body of the furnace. For hard coal or coke, we recommend the use of our rocking bar grate. For wood we have a separate wood grate in halves inserted through feed door on top of coal grates.

Boomer Furnace Grates

Draw Center Grate

Furnished regularly with all except Steel and 318 Series Boomer Furnaces



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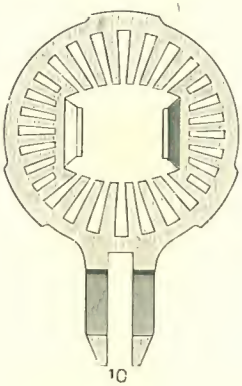

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11

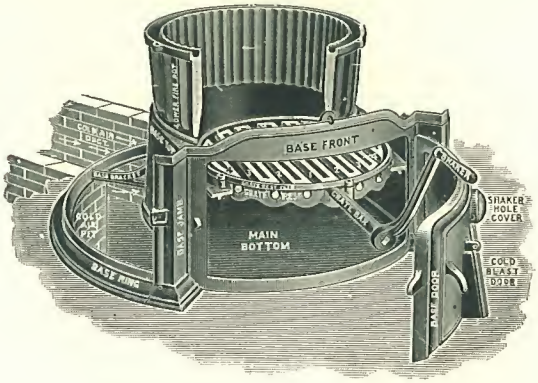
No. 9, Grate rest, showing wheel bearings on which grate revolves.

No. 10, Main Grate. No. 11, Draw center for grate.

See illustration and directions page 11 for removal of grate from new style base.

Rocker Bar Grate

Furnished only when Specified.



No. 1 center bar for rocker bar grate.

Nos. 2, 3 and 4 side bars for rocker bar grate.

When ordering repairs, give number of bar and size of furnace.

Boomer Radiators

Return Flue Radiator

The cast iron parts of the radiator are the upper and lower heads, center gas dome, smoke pipe socket and clean-out socket.

The steel parts are the inner and outer shells, which are about ⅛-inch thick or 12 gauge; the cast iron heads contain flanges 1½ inches in width, over which the steel shells are expanded and thoroughly packed with asbestos cement. The rods holding the radiator together are entirely outside and free from the action of the fire, thus drawing the radiator more tightly together as the heat increases. The joints for clean-out and smoke pipe connections are outside of main casing, making the whole radiator smoke, dust and gas tight.

Heat is made in the fire pot and the radiator must take care of it. Study the cut thoroughly and you must conclude that the Boomer radiator does take care of the heat.

The fire travel in the Boomer return flue radiator is such that it brings every inch of radiating surface in direct contact with the fire, exhausting all the heat before the smoke pipe is reached. Again, every inch of the radiator so thoroughly heated, must come in contact with the flowing air to be heated.

Too much heat escapes into the chimney from ordinary furnaces; buy a Boomer and save much of this wasted heat.

Active radiating surface, No. 73 size, 15,461 square inches; capacity for air between furnace and casing, 944 inches.

Directions for Cleaning Boomer Radiators

Steel or Cast Return Flue Radiator

Numbers 350, 381, 442, 503, 60, 71, 72, 73, 318, 320, 322 and 324.

Radiators should be cleaned at least once each year, preferably in the spring. First, remove the smoke pipe, clean out the soot, and put away in a dry place, for the summer. Remove clean-out door; then, with a scraper or bench brush, reach into smoke pipe socket, push the accumulation of soot and ashes forward toward the clean-out, then reach into the clean-out and push it down into the fire pot, through the neck of the dome.

Cast Double Return Flue Radiator

Numbers 1381, 1442, 1503 and 600.

Insert scraper through upper clean-out door, to back of radiator, both right and left sides.

Draw ashes to front of radiator, allowing them to fall into lower half of radiator.

Open lower clean-out door and proceed as above.

All refuse can then be taken out through lower clean-out door.

Clean out fire pot and ash pit thoroughly and fill lower fire pot half full of lime.

The parts liable to rust during the summer months will last much longer if directions are followed.

To be economical, a furnace should be cleaned at least once a year.

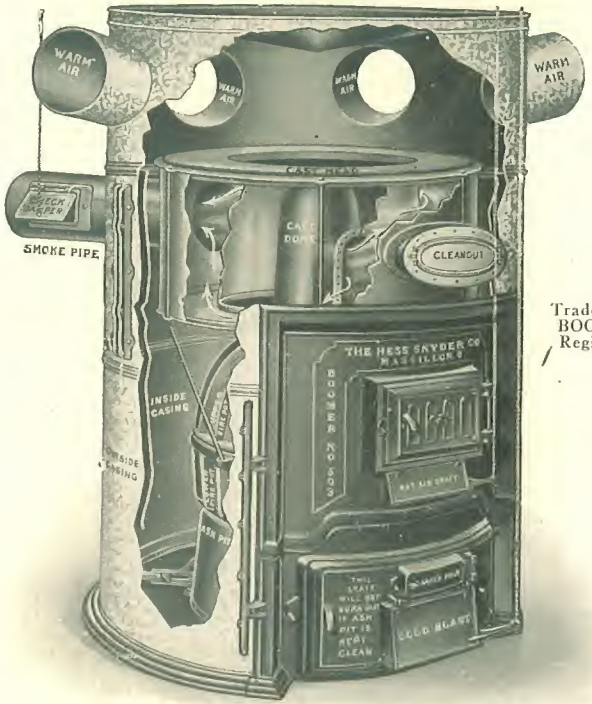
The following furnaces are self-cleaning and do not have clean-out doors;

Numbers 130, 131, 142, 153, 220, 251, 292 and 333.

Boomer Furnace

Return flue, heavy steel plate radiator.

For Hard Coal, Soft Coal, Coke or Wood



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DETAILED INFORMATION

Nos.	Weight	Diameter Fire Pot	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
350	1,220 lbs.	18 in.	38 in.	76 in.	56 in.	10,000 to 12,000	7¼x11¼ in.
381	1,475 lbs.	20½ in.	40 in.	76 in.	56 in.	12,000 to 15,000	7¼x12¼ in.
442	1,800 lbs.	23½ in.	46 in.	76 in.	57 in.	15,000 to 25,000	7¼x12¼ in.
503	2,275 lbs.	28 in.	52 in.	76 in.	58 in.	25,000 to 35,000	8¼x12¾ in.
60	2,920 lbs.	32½ in.	60 in.	81 in.	58 in.	45,000 to 65,000	8¼x15 in.
0350	1,110 lbs.	18 in.	38 in.	66 in.	50 in.	6,000 to 8,000	7¼x11¼ in.
0381	1,350 lbs.	20½ in.	40 in.	66 in.	50 in.	9,000 to 12,000	7¼x12¼ in.
0442	1,650 lbs.	23½ in.	46 in.	66 in.	50 in.	12,000 to 16,000	7¼x12¼ in.
0503	2,110 lbs.	28 in.	52 in.	66 in.	52 in.	16,000 to 25,000	8¼x12¾ in.
60 Low	2,710 lbs.	32½ in.	60 in.	71 in.	52 in.	25,000 to 35,000	8¼x15 in.

The 0350-60 Low series is identically the same as the 350-60, except that the radiators of the 0350 series are six inches lower than those of the 350 series.

Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

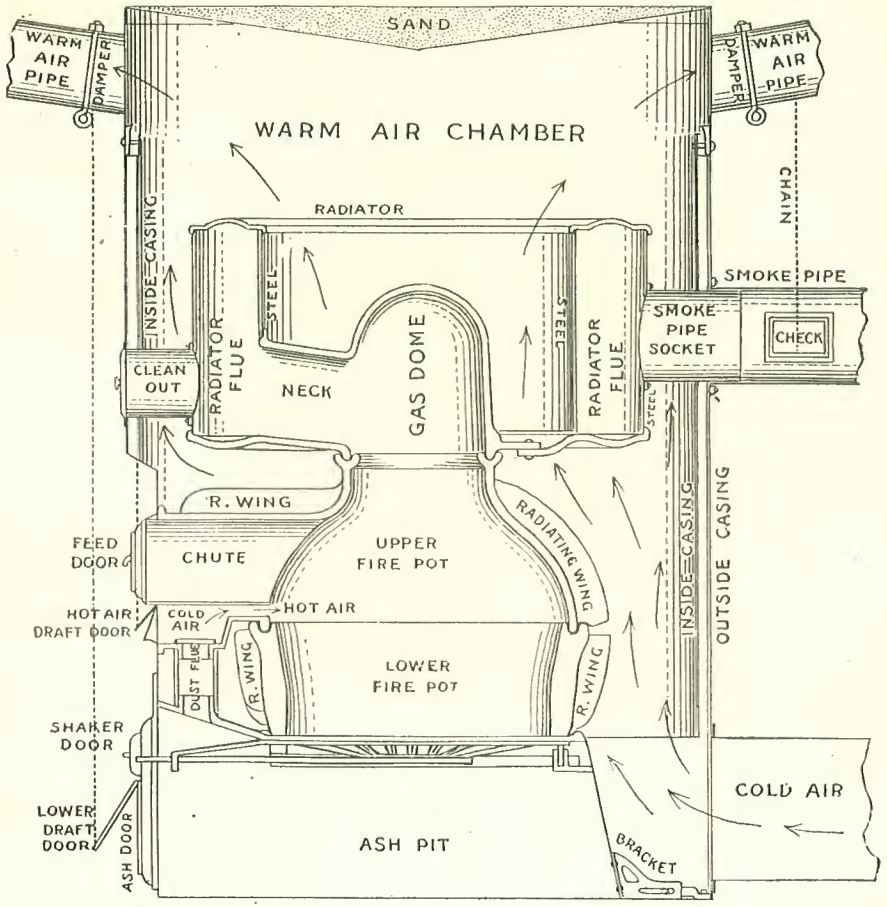
For description of Radiator, see page 13; Grates, page 12; Casings, page 38; Hot Water Attachments, page 36.

Rules for laying out Heating System, page 4.

This furnace may also be used as a floor heater, price same as regular furnace.

Construction of Boomer Furnace

With Steel Radiator

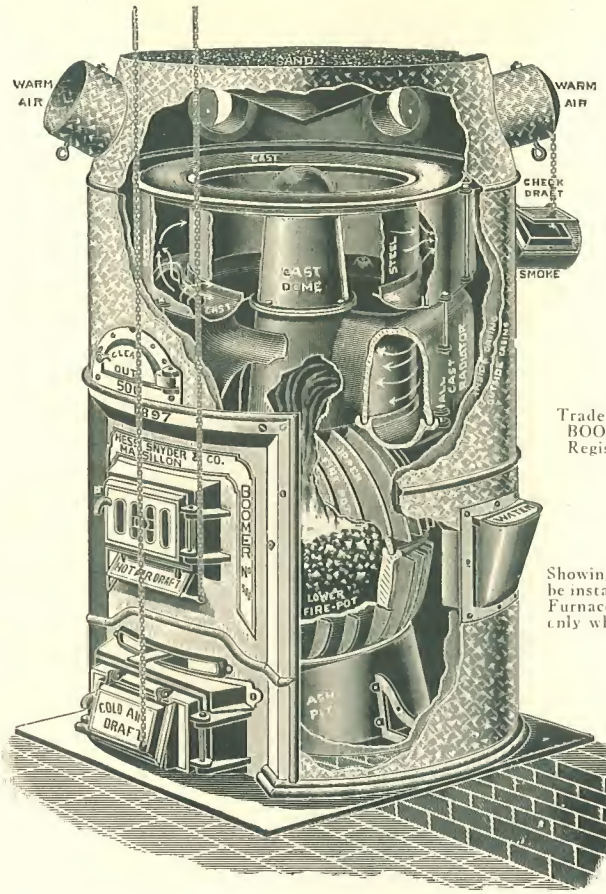


This cut represents the Boomer furnace with steel radiator and draw center grate, giving a clear idea of its wonderful construction. Notice well the shape and thickness of castings, size and kind of joints, the way the fire must travel around the radiator, and cold air on both sides of fire.

Boomer Furnace

Double return flue, heavy cast iron radiator

For Hard Coal, Soft Coal, Coke or Wood



Trade Mark
BOOMER
Registered

Showing how water box can be installed in any Boomer Furnace. Water box shipped only when ordered special.

DETAILED INFORMATION

Nos.	Weight	Diameter Fire Pot	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
600	3,350 lbs.	32½ in.	60 in.	81 in.	64½ in.	45,000 to 65,000	8¼x15 in.

Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

For description of Boomer Grates, see page 12; Casings, page 38; Hot Water Attachments, page 36. Rules for laying out Heating System, page 4.

This furnace may also be used as a floor heater, price same as regular furnace.

We have discontinued making Nos. 1381, 1442 and 1503 sizes, but can furnish any repairs if needed.

Description of Boomer Furnaces
Nos. 130, 131, 142 and 153

This furnace is designed for the use of coal, wood or natural gas. The **large double door opening** enables the operator to throw in large chunks of wood or coal by opening both doors; the lower door being sufficient for ordinary firing. Special attention of farmers is called to this feature.

The fire pot is made in two parts and heavily ribbed, increasing its radiating surface about two-thirds over a plain fire pot.

The radiator is made of No. 12 gauge cold rolled steel, mounted securely on two cast heads.

Radiating wings of cast iron, 2 inches wide and about 8 inches apart, running the entire height of the radiator, add about two-thirds to the heating capacity of the radiator and act as braces to the steel as well. We are firm believers in the use of extended radiating surface, reducing coal bills as well as adding greatly to the wearing qualities of the metal.

The upper radiator head receives our new **cast iron diving flue,** extending outside of casing. It can be shifted in any position around the furnace, making a direct line for smoke pipe from furnace to chimney. The diving flue being attached to the center of upper head, draws the melting heat away from the steel. The tendency is to heat alike all over the radiator.

The main front is large and handsome in appearance, with expansion joint.

The lower feed door is lined with a cast iron perforated liner and contains a **check draft slide.**

A swinging smoke guard prevents smoke from getting into the cellar when upper feed door is open.

This furnace has been given a severe test during the past 24 years, its qualities of endurance surpassing our most sanguine expectations. We feel that we have struck the keynote in offering to the trade a thoroughly genuine first-class furnace, with many handy attachments, that have made it popular in all sections.

Description of Boomer Furnaces
Nos. 220, 251, 292, and 333

This entire furnace is made of heavy cast iron of the best quality, and will burn successfully and economically, soft coal, coke, wood or natural gas.

Combustion Chamber

This section is made in one piece 24 inches high; it rests in cup joint on top of fire pot. Notice well that it is round at the bottom and gradually draws into deep corrugations at the top, thereby increasing the radiating surface and giving the casting great strength. In the top of this section, divided equally around its circumference, is a series of holes leading into top return flue radiator. It will readily be seen by this method of outlet, that the fire is all drawn and equally distributed to the entire outer surface of combustion chamber, making it all intensely active radiating surface.

Top Return Flue Radiator

This cast iron radiator receives the products of combustion from the combustion chamber through a series of tubes, as shown, compelling what heat has not been absorbed by the combustion chamber, to make an entire circuit of radiator before reaching the smoke pipe.

Fire Pot Extra Strong

The fire pot is made in two parts and heavily ribbed, increasing its radiating surface about two-thirds over a plain fire pot.

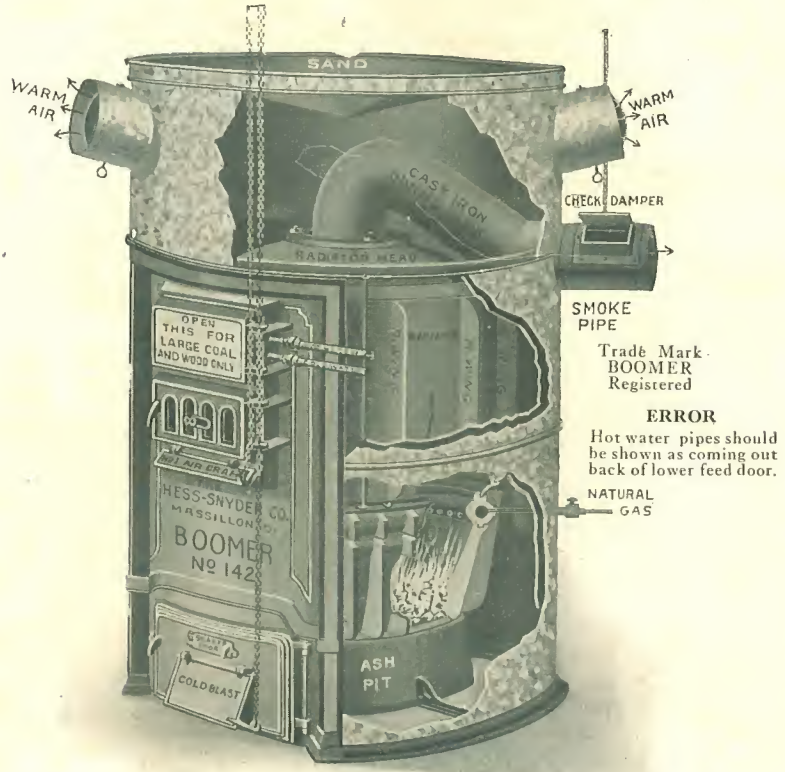
Ash Pit and Base Ring

The ash pit and base ring for above furnaces, are so constructed that when connected by projecting arms or brackets, they are level with each other. The ash pit top and sides are cast in one piece, and the connection to the bottom is made with a double joint. The recess in base top to receive the fire pot is very large and roomy. Our new method of holding the cement in this joint is the finest ever introduced. The expansion of the fire pot will not crack the ash pit top. It is absolutely gas and dust proof. The ash pit is extra large and high, lessening the liability to burn out the grate, allowing easy removal of the ashes, and does not have to be emptied so often.

For description of Boomer Grates, see page 12; Casings, page 38; Hot Water Attachments, page 36; Gas Burner, page 36.

Boomer Furnace

King of furnaces for coal, wood or natural gas
Natural gas and coal can be burned at the same time



DETAILED INFORMATION

Numbers	Diameter Fire Pot	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
130	21¾ in.	40 in.	70 or 64 in.	64 in.	12,000 to 15,000	13x18 in.
131	24½ in.	44 in.	72 or 64 in.	64 in.	15,000 to 21,000	13x18 in.
142	28 in.	50 in.	72 or 64 in.	65 in.	21,000 to 33,000	13x18 in.
153	31½ in.	56 in.	73 or 65 in.	65 in.	33,000 to 50,000	13x18 in.

Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

For description, see page 17.

Feed opening, 13x18 inches: just the thing for wood or large chunks of coal.

For one-piece natural gas ring, ordered with furnace, and we keep upper fire pot, add to list price of furnace, numbers 131 or 142, $12.00.

Height to top of casing, 6 feet. Eight inches can be cut off of casing hood, reducing the height to 5 feet, 4 inches.

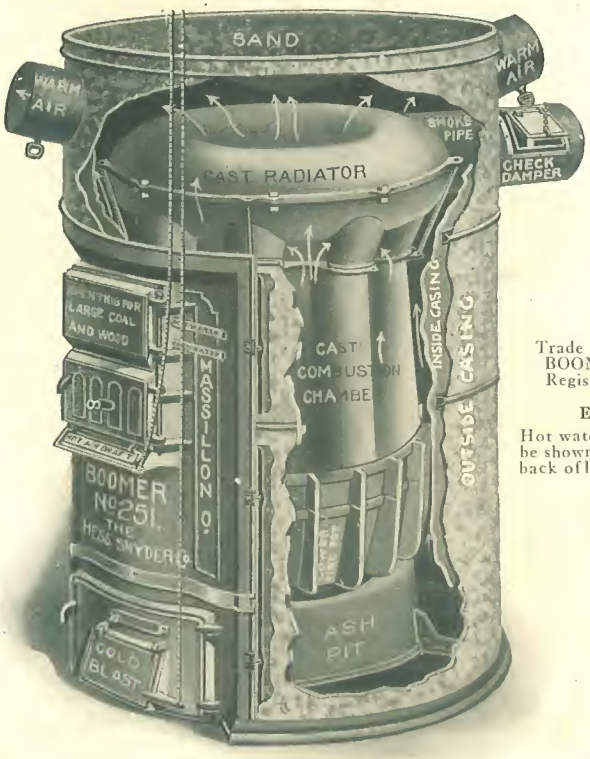
For description of Boomer Grates, see page 12; Casings, page 38; Hot Water Attachments, page 36. Gas Burner, page 36.

Rules for laying out Heating System, page 4.

This furnace may also be used as a floor heater, price same as regular furnace.

Boomer Warm Air Furnace

Made entirely of heavy cast iron. With top return flue radiator Self Cleaning. For soft coal, coke or natural gas



Trade Mark
BOOMER
Registered

ERROR

Hot water pipes should be shown as coming out back of lower feed door.

DETAILED INFORMATION

Numbers	Diameter Fire Pot	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
220	21¾ in.	40 in.	70 or 66 in.	59 in.	12,000 to 15,000	13x18 in.
251	24½ in.	44 in.	71 or 67 in.	59 in.	15,000 to 21,000	13x18 in.
292	28 in.	50 in.	73 or 69 in.	63 in.	25,000 to 35,000	13x18 in.
333	31½ in.	56 in.	74 or 70 in.	63 in.	40,000 to 60,000	13x18 in.

Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

For description, see page 17.

For one-piece natural gas ring, ordered with furnace, and we keep upper fire pot, add to list price of furnace, numbers 251 or 292, $12.00.

Feed door opening 13x18 inches, admitting large pieces of coal or wood. 20-inch warm air pipe can be taken off of hood without increasing height of hood or making furnace stand over 6 feet high.

For description of Boomer Grates, see page 12; Casings, page 38; Hot Water Attachments, page 36; Gas Burner, page 36.

Rules for laying out Heating System page 4.

This furnace may also be used as a floor heater, price same as regular furnace.

Description of Boomer Steel Furnaces

Construction

Every Boomer furnace is mounted complete here at the factory, before it leaves; every part is carefully fitted and inspected.

The Boomer Steel Furnace drum is made from one solid piece of steel boiler plate from top to bottom, $\frac{3}{16}$-inch thick, with a flanged head riveted in the top. It is made exactly like a steam boiler—absolutely air-tight. There is no possibility of leakage of gas, or smoke.

Fire Pot

The fire pot is one solid piece of boiler plate $\frac{3}{16}$ in. thick, lined with two sets of sectional fire brick linings, arranged in a circle, one above the other. These linings are used to protect the steel, and may be easily removed and replaced through the feed door.

The diameter of the fire pots from center to center of No. 195 is 27 in., No. 193 is 24 in. and of No. 191 is 20 in. The depth of the fire pot from the feed door to the grate, in front, is 13 in.; from the top of the fire-brick lining to the grate, in the back, is 22 in. This provides an exceptionally large receptacle for fuel, and will hold sufficient coal to run the fire from six to eight hours without being replenished.

The feed door opening of Nos. 193 and 195 is 13x13 in., and of No. 191 is 12½x13 in., which makes it possible to use very large chunks of fuel.

Ash Pit

The ash pit is deep and roomy, allowing plenty of space for ashes without endangering the grate, and giving free passage of air to the grate, which is very essential for good combustion. Ash pit opening is 9x15 in., making it possible to use a large shovel with which to remove the ashes.

Base and ring for these furnaces are made in one piece.

Grates

There are four independent revolving grate bars, triangular, and operated by a crank. Each bar works separately and independently of the others. The ashes can be removed from any part of the fire pot, without wasting coal, and it is an easy matter to crush a clinker through this grate. It is held in place by two plates, fastened to the front of the furnace by two ¼-in. bolts. By taking out these two bolts, the entire grate may be removed and replaced in a few minutes without disturbing any other part of the furnace.

In the operation of the Boomer Steel Furnace, the products of combustion can only escape through the combustion chamber above the fire pot, by entering the two large descending radiators, at the top, then down to the horizontal lower cast radiator, where they connect to the ascending radiator, and give all possible benefit of the fuel consumed. The exceedingly long fire-travel, from the deep, straight fire pot, with the large combustion chamber directly over the fire, and then through the three-flue radiator, makes the heat travel a long distance, and all inside of the casing, before it reaches the smoke outlet.

Any accumulation of ashes can be easily removed from the radiator of the Boomer Steel Furnace, through outlets on each side of the furnace. One of these outlets extends through the casing, and, by simply opening the clean-out door, the ashes may be easily removed.

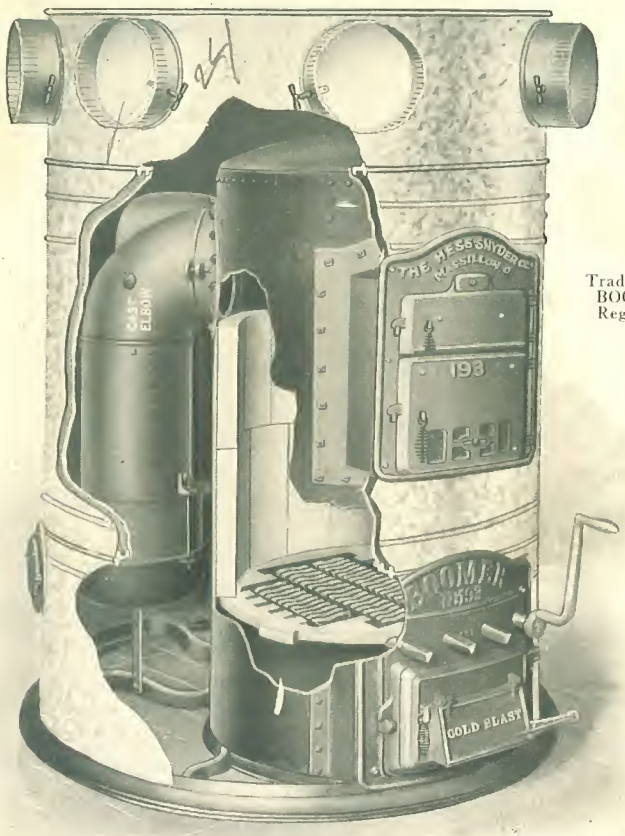
The Lower Feed Door is lined with cast iron perforated liner, and contains a check draft slide.

The Upper Feed Door is lined with cast iron, perforated liner.

Hot Water Attachments for domestic purposes can be put into the Boomer Steel Furnace at any time after it is set up, by simply removing the small plate marked "Hot Water," which covers the openings in the furnace for hot and cold water pipes.

Boomer Steel Furnace

Smoke, Soot and Gas Consuming Furnace, Saves 20 Per Cent in Coal Consumption



Trade Mark
BOOMER
Registered

DETAILED INFORMATION

Nos.	Weight	Diameter Steel Shell	Diameter Fire Pot	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
191	1,100 lbs.	22 in.	20 in.	46 in.	78 in.	57 in.	14,000 to 20,000	12½x13 in.
193	1,400 lbs.	26 in.	24 in.	52 in.	78 in.	57 in.	20,000 to 30,000	13 x13 in.
195	1,600 lbs.	30 in.	27 in.	56 in.	78 in.	60 in.	25,000 to 40,000	13 x13 in.

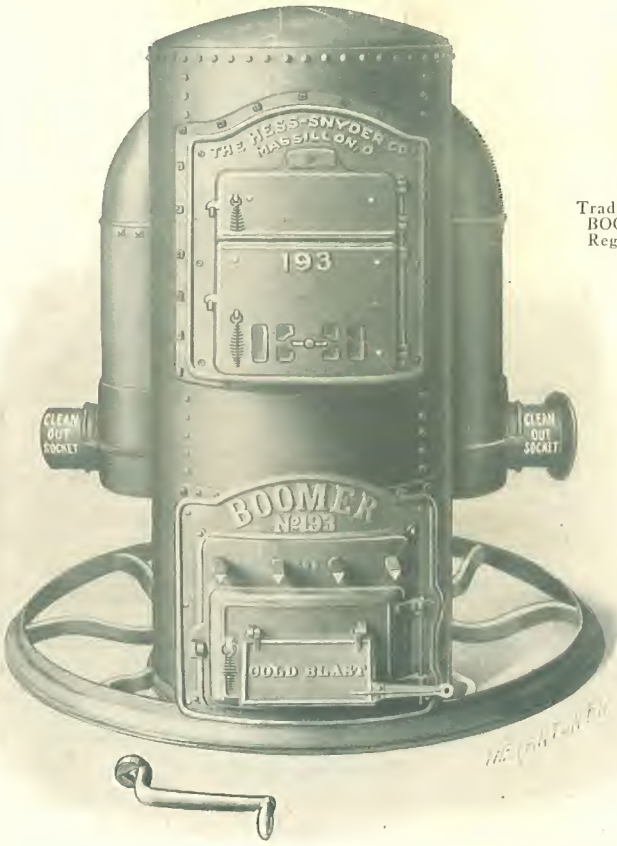
Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

For description, see page 20.
Rules for laying out Heating System, page 4.
This furnace may also be used as a floor heater, price same as regular furnace.

At an additional cost can furnish smoke elbow with special extensions so smoke pipe can be taken off at different angles. When wanted this should be ordered special.

Boomer Steel Furnace

Smoke, Soot and Gas Consuming Furnace, Saves 20 Per Cent in Coal Consumption



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Boomer Steel Furnace, Less Casing

The Boomer Steel Furnace is an entirely new departure in steel furnace construction and is the result of years of study of the subject.

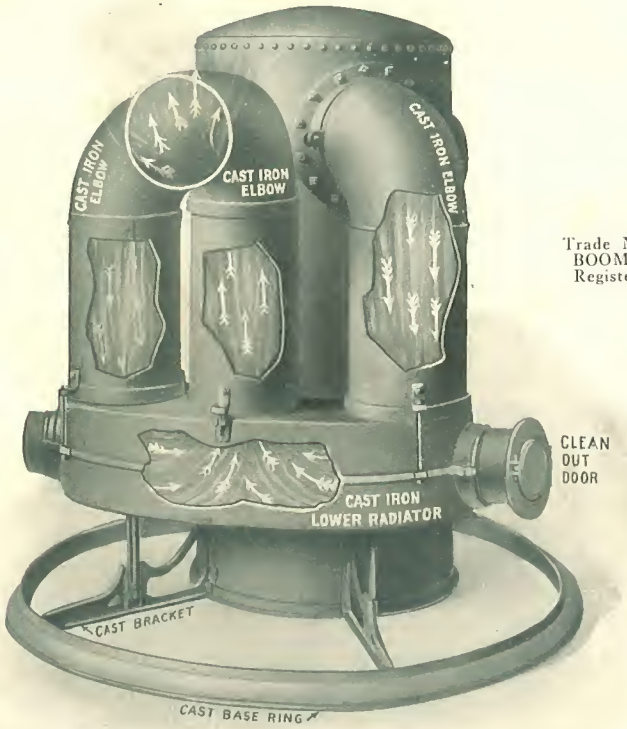
As builders of furnaces for the past forty years, it has been our aim to give our patrons the very best furnace it is possible to build.

This is the secret of success.

For description, see page 20.

Rules for Laying Out Heating System, page 4.

Radiating Flues of Boomer Steel Furnace



This Cut Shows the Radiating Flues of Boomer Steel Furnace

From the combustion chamber over the fire pot, the products of combustion are carried down through two descending flues into the horizontal lower cast iron radiator, then up through the ascending flue, where the unconsumed smoke and gas is carried into the smoke pipe. The long fire travel, thus obtained, gives the greatest benefit from the fuel consumed.

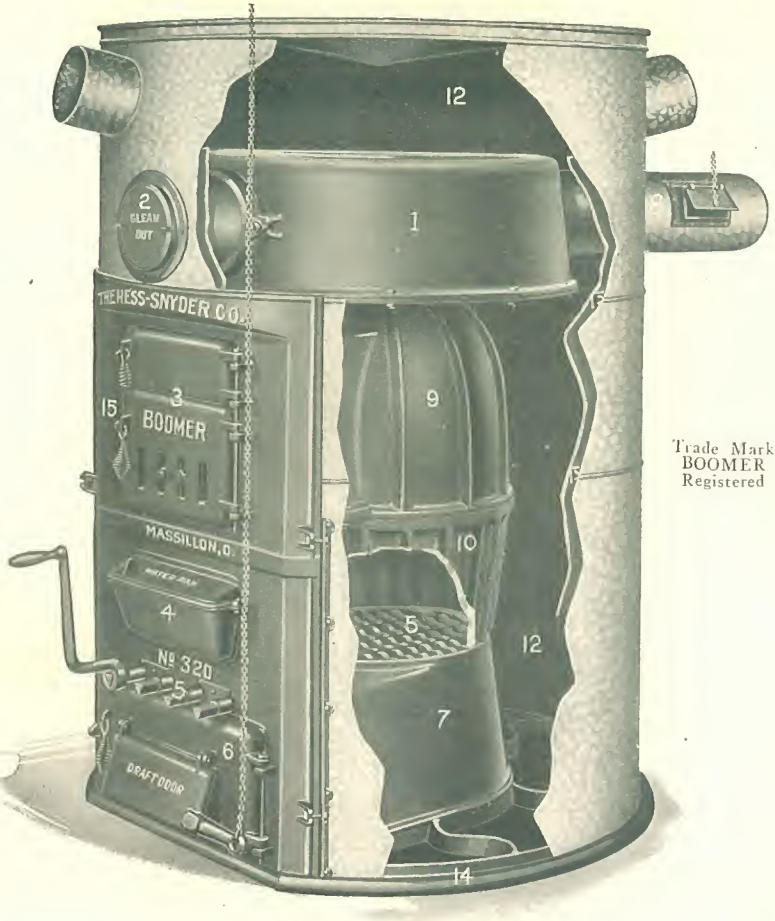
The horizontal lower cast iron radiator and diving flues not only increase the radiating surface of the furnace, but retard the draft so that most of the heat generated from the fuel will radiate within the casing and be utilized before it escapes to the chimney, which means more heat with less fuel.

Through the clean-out doors on each side of the furnace any accumulation of ashes may be easily removed.

At an additional cost can furnish smoke elbow with special extensions so smoke pipe can be taken off at different angles. When wanted this should be ordered special.

Boomer Furnace

Return Flue Radiator All Cast Furnace



Trade Mark
BOOMER
Registered

DETAILED INFORMATION

Nos.	Weight	Diameter Fire Pot Inside	Diameter Casing	Height Cased	Height Not Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
318	1025	18 in.	40 in.	76 in.	53½ in.	11,000 to 14,000	12x13
320	1130	20 in.	44 in.	78 in.	53½ in.	13,000 to 17,000	12x13
322	1230	22 in.	48 in.	78 in.	53½ in.	15,000 to 22,000	12x13
324	1425	24 in.	52 in.	78 in.	53½ in.	20,000 to 28,000	12x13

Actual capacities cannot be accurately given owing to the varied conditions under which a furnace may be installed.

Casings page 38; Hot water attachments page 36.

This furnace may also be used as a floor heater, price same as regular furnace.

The Boomer

It has been the constant endeavor of The Hess-Snyder Company to offer the public something a little better in the way of a warm air heating unit, and in the designing of the furnace herein shown, no expense has been spared, but great care has been taken to give you the very best.

The castings throughout are built to give maximum service, measuring up entirely to "BOOMER" quality, thus furnishing you a heat unit of the highest degree of heating capacity and insuring a long, useful life.

"BOOMER" quality has entered into every detail, appreciating the prestige enjoyed by Boomer dealers in offering the public an article of merit.

Our furnaces are built of the very best material throughout, on thoroughly scientific principles, embodying points of superiority and merit. We know, as experienced foundrymen, that our cast iron products are second to none under the straining power of heat. **We have often been asked why we make our castings so heavy.** As iron in its raw state is sold by the pound the world over, we certainly would be foolish to put more iron into a furnace than would be necessary for its strength and durability, since furnaces are not sold by the pound. We answer that since 1882 we have never been compelled to shut down for want of orders, indicating that the people appreciate a good article and are satisfied with value received.

1—Radiator

is all cast, made in two pieces to provide for necessary contraction and expansion.

Horseshoe style—Large flues give full circulation thus absorbing the last degree of heat from the fuel.

2—Cleanout

Cleanout is large and placed conveniently for removing soot from radiator.

All soot can be drawn to front of radiator and shoved into the fire pot and taken out through ash pit.

3—Fuel Doors

Two fuel doors are used, thus making a large opening for fuel. Slide dampers furnish a means of adjustment for all kinds of fuel and weather conditions.

4—Water Pan

The water pan is of ample size and placed at just the correct position to provide sufficient moisture to insure proper humidity at all times.

5—Grates

There are four independent revolving grate bars, triangular, and operated by a crank. Each bar works separately and independently of the

others. The ashes can be removed from any part of the fire pot, without wasting coal, and it is an easy matter to crush a clinker through this grate. The grate is held in place by two plates, fastened to the front of the furnace by two ¼ in. bolts. By taking out these two bolts, the entire grate may be removed and replaced in a few minutes without disturbing any other part of the furnace.

6—Ash Pit Door

The ash pit door is large, making removal of ashes easy.
NOTE: It is dust tight.

7—Ash Pit

Ash pit is commodious, providing sufficient space and ample draft when required.

8—Smoke Socket

Cast iron socket attached to radiator by heavy lug bolts, insuring perfectly tight joint. Smoke pipe can be taken off of furnace at any angle.

9—Combustion Chamber

Combustion chamber is designed to give the greatest possible radiation and to insure the proper burning of all gases, thus giving the most heat from the fuel.

10—Fire Pot

The original "BOOMER" corrugated fire pot with corrugations ½ inch deep, and covered with radiating wings, insuring a perfect flow of air at all times between the fire pot and the bed of coals, thus reducing to a minimum any fuel waste, and thus consuming the smoke and gases.

11—Joints

are tight fitting. All castings are ground to fit perfectly before leaving our Mounting Room. No grinding or filing castings on the job.

12—Air Space

The air space is of ample capacity to insure perfect flow of air, causing all air to be properly heated before entering the leader pipes.

13—Casings

are double with 1½ inch full space between, insuring perfect insulation, preventing the heat from being thrown off into the cellar.

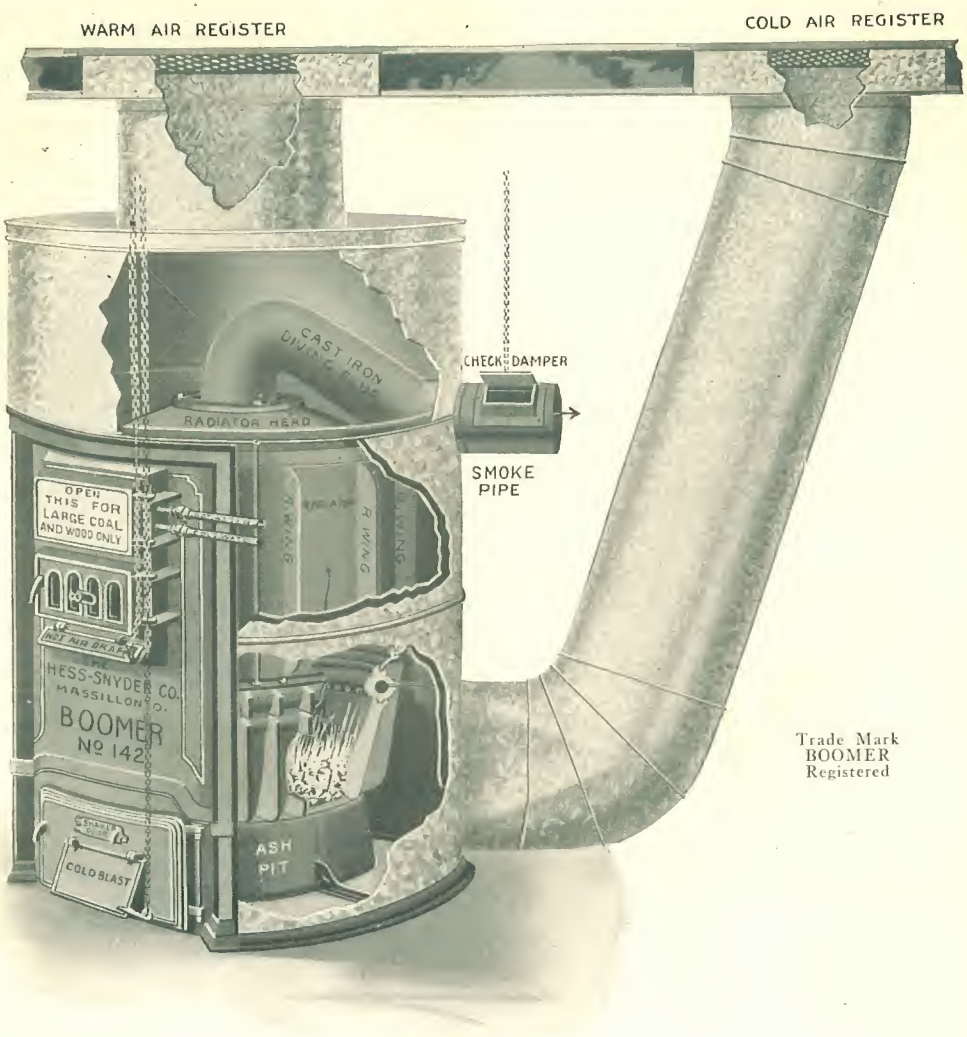
Cast clamps riveted on the ends of casing make the casings absolutely tight on the rings—a feature not to be overlooked.

14—Base

Base and rings in one piece.

15—Hot Water Attachments

For domestic purposes can be put into the Boomer Furnace at any time after it is set up, by simply removing the small plate from the front at the left of lower feed door, which covers the openings in the furnace for hot and cold water pipes.



Trade Mark
BOOMER
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THE BOOMER PIPELESS FURNACE

Numbers	Weight	Diameter Fire Pot	Diameter Casing	Height Cased	Estimated Heating Capacity by Circulation Cubic Feet	Feed Opening
130	1,100 lbs.	21¾ in.	40 in.	70 or 64 in.	12,000 to 15,000	13x18 in.
131	1,150 lbs.	24½ in.	44 in.	72 or 64 in.	15,000 to 21,000	13x18 in.
142	1,450 lbs.	28 in.	50 in.	72 or 64 in.	21,000 to 33,000	13x18 in.
153	1,750 lbs.	31½ in.	56 in.	73 or 65 in.	33,000 to 50,000	13x18 in.

Actual capacities cannot be accurately given owing to the varied conditions under which a furnace may be installed.

Feed openings 13x18 inches. Just the thing for wood or large chunks of coal.

Any Boomer Furnace can be installed as a pipeless furnace same as above.

—Pipeless—

The illustration on page 27 clearly and fully illustrates the manner in which the BOOMER PIPELESS FURNACE is set up in the basement of any building.

You will note that the warm air is taken immediately off of the top of the furnace, and discharged into the room above through the large galvanized iron pipe and register. The air that is intended to pass over the furnace to become heat, is supplied through the cold air register, and the large galvanized iron pipe attached to the bottom of the furnace casing—as shown in the picture—by this method there is no danger whatever of the cold air shaft becoming heated so that circulation is retarded—as is done when the cold air is taken down between the inside and the outside casing of the furnace. The BOOMER method provides absolutely perfect air circulation, which is positively necessary with any perfectly working furnace. You may rest assured that the slight difference in cost will be fully returned to you before one-half of the first winter's use of the BOOMER, in the saving of fuel—besides, you will have a much longer lived furnace.

You will also note that the galvanized iron casing enclosing the furnace, is double, so as to prevent the radiation of heat into the cellar, and where heat in such cases would be objectionable.

During the past few years there has been an increasing demand, in some localities, for what is known as the pipeless warm air furnace, and we have never had any faith in the **method** employed by some manufacturers of installing this system of heating.

It has always been our aim to furnish our agents with such furnaces as will enable them to meet all legitimate competition, and this is our object in offering you the BOOMER PIPELESS FURNACE, as shown by the accompanying cut.

If you know anything at all about circulation of air, you will know that it is impossible to have any furnace discharge its MAXIMUM amount of heat, when the cold air must travel down between the inside casing and the outside casing of the furnace—the reason for this being that the higher the temperature of the furnace, the more the circulation of air between the inside and outside casing is retarded; and the smaller the amount of cold air that can pass between the casings, the less the amount of heated air you will have to heat the building.

In the BOOMER PIPELESS FURNACE, we have overcome this objection by providing a separate cold air shaft, as shown in the illustration, and by this method circulation is not retarded in the least, nor does it interfere with the furnace from in any way discharging its MAXIMUM amount of heat—this is both logical and scientific—and we are prepared to prove it if necessary or desirable. If you desire, the cold air may be taken from two pipes and registers instead of one as shown in cut, or from the cellar and enter the furnace through an opening to be made in the bottom of the furnace casing—by so doing, you can save the cost of a cold air shaft and register face, although we do not recommend the cold air be taken from this source.

The cold air register may be placed wherever most desirable, at any distance from the furnace.

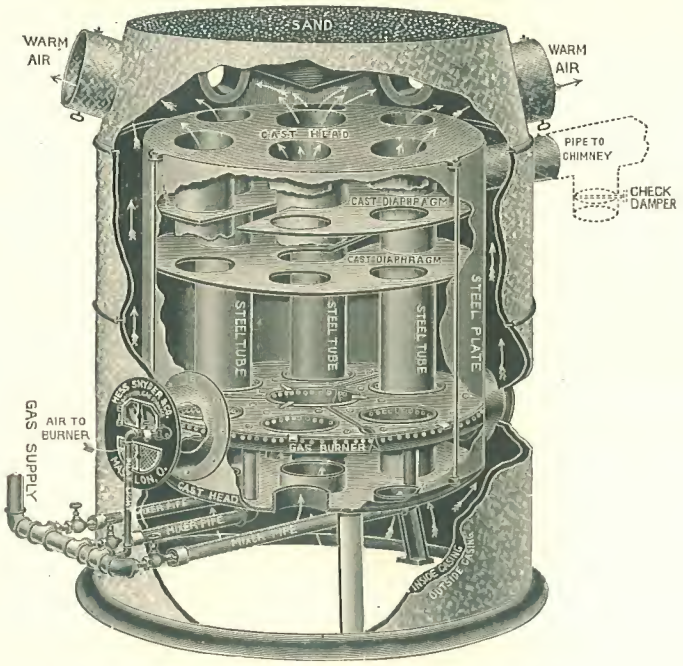
We are interested in every dealer selling BOOMER FURNACES, therefore, we are very cautious when it comes to urging him to sell any furnace we make that we have the slightest idea may be short-lived, and ultimately cause the dealer to lose the confidence of his customers.

The successful business man is the one who enjoys the confidence of the people with whom he is transacting business; therefore, you should not fall for every new fad that is constantly being brought to your attention.

If you have any customers who are desirous of installing a heating system without the use of warm air pipes in the cellar, we unhesitatingly recommend and offer to you the BOOMER.

The Boomer Gas Furnace

For Natural Gas Only



DETAILED INFORMATION

Number	No. of Tubes	No. of Burners	Diameter Casing	Height Cased	Estimated Heating Capacity By Circulation Cubic Feet
035	7	3	35 in.	68 in.	15,000 to 25,000

Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

Notice well its wonderful construction, all the flame coming directly in contact with radiating surface, and air of oxygen fed directly to flame, producing an intense heat with small gas consumption.

For description, see page 32.

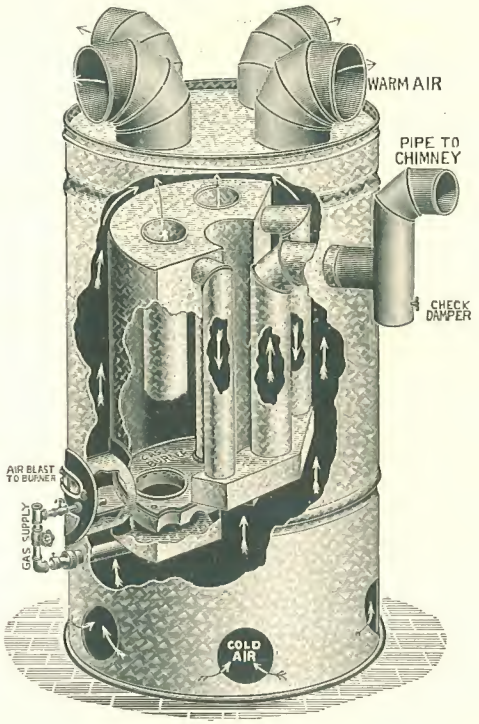
Special Notice

This furnace is made also with refined iron casing making it a suitable heater to be set directly in the room to be heated. Just the thing for store rooms, schools and churches.

Rules for Laying Out Heating System, page 4.

Boomer Gas Furnace

For Natural Gas



Nos.	Diameter Cased	Height Cased	No. of Burners	No. of Tubes	Estimated Heating Capacity By Circulation	Cold Air Capacity
03	24 in.	60 in.	1	2	2 to 3 rooms 4,000 to 6,000 cubic ft.	250 sq. in.
05	32 in.	60 in.	2	5	4 to 6 rooms 8,000 to 14,000 cubic feet	400 sq. in.

With double casing. $2.00 net, extra.

Actual capacities cannot be accurately given, owing to the varied conditions under which a furnace may be installed.

Notice Well Its Wonderful Construction

Made of No. 22 gauge cold rolled steel, galvanized iron casing, cast iron burner and front. All flame comes directly in contact with main heating drum, thence into two diving flues; from these flues at bottom into horseshoe radiator, then up into center flue and out to chimney.

Notice well the green and copper color gas flame produced. Burning up all steam (oxygen and hydrogen) by a secondary air blast, instead of sending these elements into the rooms where condensation takes place on windows or any cold surface.

More heat, less gas and no steam. Could anything be more desirable?

For description, see page 32.

Description of Boomer Gas Furnaces

No. 035 Furnace is built of the very best grade of extra heavy material throughout, on thoroughly scientific principles. The cast iron parts are the upper and lower heads, diaphragm, pipe socket and collar, three burner sockets and fronts, heavy steel forming the seven tubes and the outer body. In the No. 035 BOOMER Gas Furnace, there are seven (7) steel tubes that pass up through the center of the furnace, and the fire from the burning of gas in the gas burners, comes in contact with the outside of these tubes; the air to be heated passes through the inside of these steel tubes. There are division plates in the furnace to compel the fire to travel around the furnace three (3) times, before it can reach the smoke pipe exit. The furnace is connected with the chimney with a smoke pipe that carries off all the fumes resulting from the burning of gas. The cold air that passes up through the inside of the steel tubes, is conveyed into the casing which encases or surrounds the furnace, and is then transmitted through warm air pipes, to the registers located in the different rooms to be heated. NO AIR PASSES INTO THE ROOM THAT COMES IN DIRECT CONTACT WITH THE FIRE, as this air is heated by radiation. The warm air pipes are connected to the top of the furnace. The cold air to supply the furnace, may be taken either from the inside of the building, from the main hall, or from the outside, whichever is preferable. This construction enables us to gain the greatest amount of radiating surface, while the diaphragm compels the fire to make a circuit of the radiator, keeping the products of combustion in the furnace long enough to extract the heat before reaching the chimney. The entire furnace rests on legs made suitable to stand over a cold air pit or not, as desired.

A matter of the greatest importance in the purchase of a gas furnace, is the selection of one so constructed that it can be connected to a chimney, so that gas fumes cannot escape into the house.

It is absolutely impossible to burn gas healthfully without a proper flue connection, which should be open at all times to allow gas fumes to escape.

Burners

The burner in the Boomer Gas Furnace is constructed especially for our furnace, and is made here in our own factory with the greatest care to attain the best possible results. The perfect construction of this burner, together with the flue connection, will keep the rooms supplied with pure, fresh, warm air at all times.

Cost of Fuel

Our experience has proven that the cost of gas at 40c per thousand, will compare favorably with the cost of the best grade of soft coal at $5.50 per ton. Our experience has also proven that it costs less to heat a house with a Boomer Gas Furnace, than to use a gas burner in a coal furnace.

The Boomer Gas Furnace is so constructed that it can be set up beside a coal furnace, and connected into it in such a manner that the hot air pipes already in the house, can be used. By this method of installation, either coal or gas may be used, as desired.

Cold air may be supplied to the Boomer Gas Furnace in the same manner as it is to the Boomer coal furnace. By reference to cuts on pages 30 and 31, it will be seen that cold air enters at the bottom into casing, passing over every part of the heater, through the tubes in main drum, and out at the top into the rooms in a thoroughly heated condition.

Directions for Operating

Always connect pipe to chimney as shown in cut, with damper in lower end of tee joint. By regulating this damper to suit draft in chimney, perfect combustion of gas and air may be obtained.

To start fire open small door in burner front, light the pilot light, close small door, turn gas on strong enough to envelop the burner, then turn on gas burner. After burner is lighted, shut off pilot light. After first burner is in operation, light the second or third burners by simply turning on the gas leading to them.

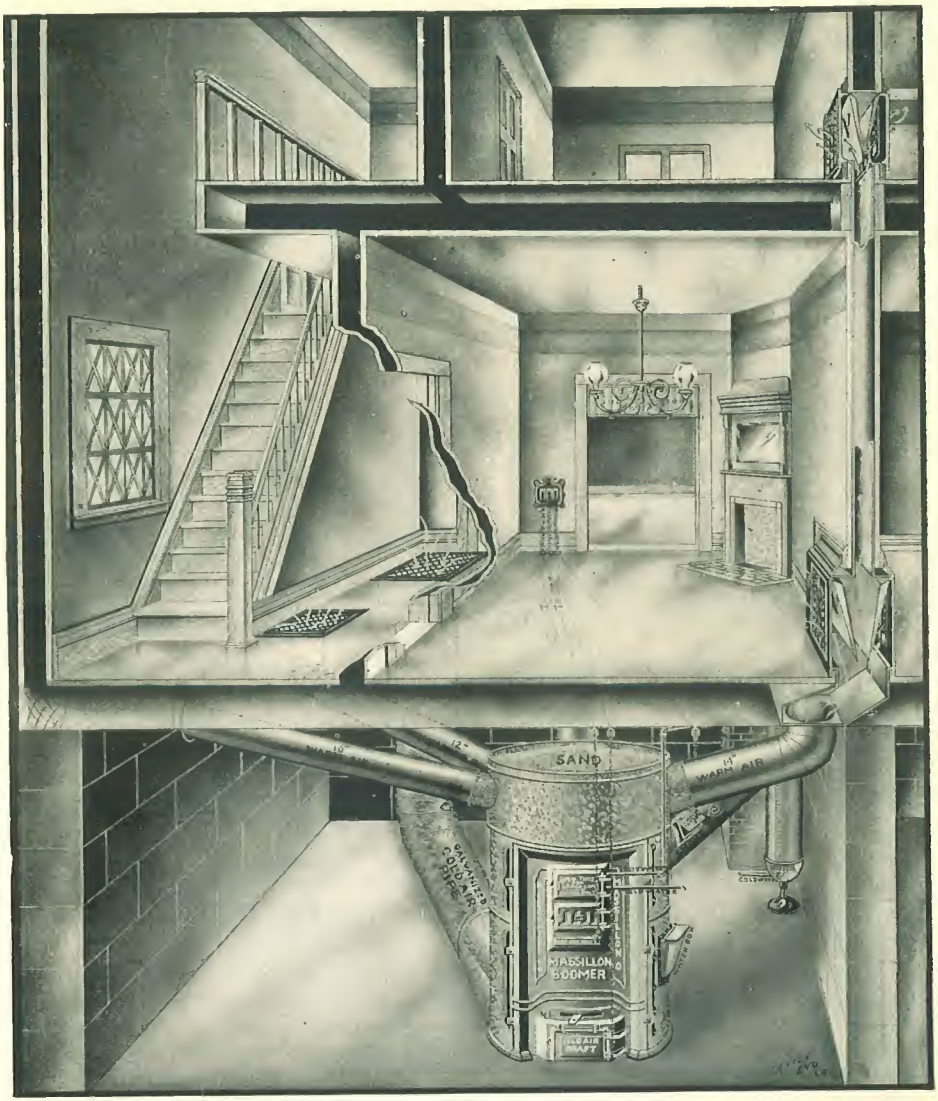
Houses of from two to three rooms can be thoroughly heated with No. 03 size by using two 10-inch pipes, two 10x12 registers, one in hall and one in a living room.

The No. 05 size can be used to heat a house from four to six rooms, every room of which is connected to the furnace.

Churches, store rooms, offices, etc., can be heated with one register only, or the heater can be set in the room to be heated, similar to a stove, furnace having open top instead of regular casing hood.

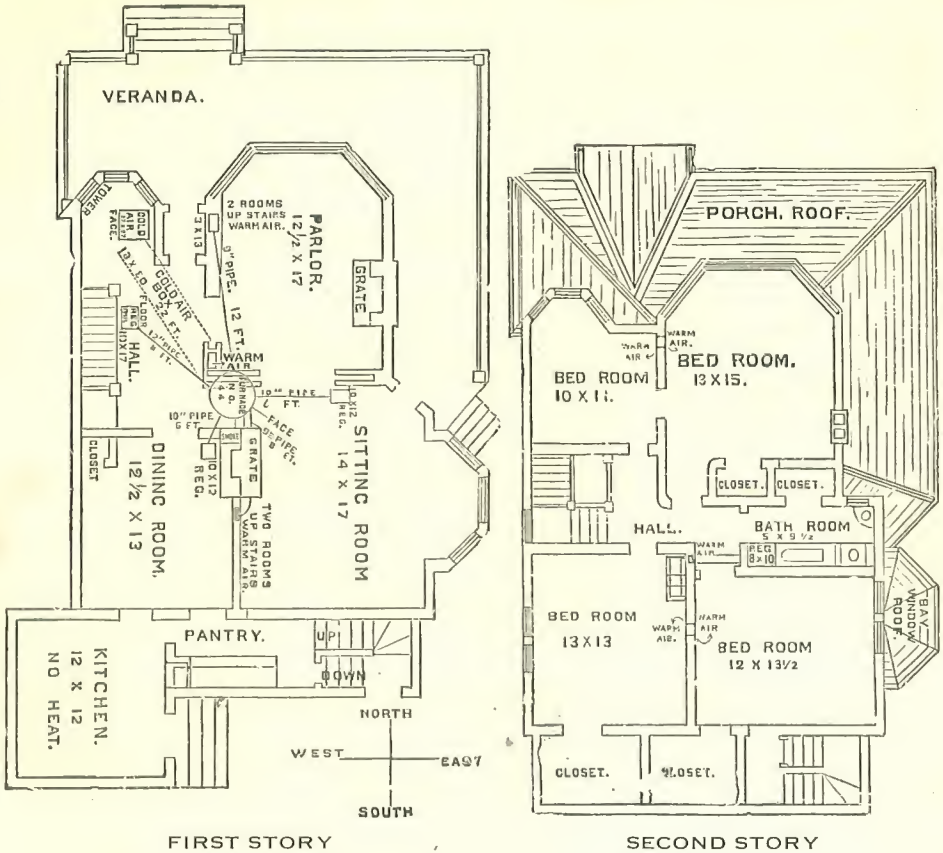
To heat a large house entirely with Boomer gas furnaces, we recommend the use of our **No. 035** size, which has three distinct burners. See heating capacity under illustrations.

Our Method of Piping to Special Side Wall and Floor Registers, and the Boomer Regulator Connected to Check and Draft Doors



Always connect side wall pipe to cellar pipe with a shoe and a four-piece elbow, as shown in the cut.
Every warm air pipe should have a damper close to the furnace.
Warm air pipes and smoke pipes should pitch upward, after leaving furnace, as much as possible.
The best furnace pipe tin is not any too good.
Double seam furnace pipes; never use solder.
We manufacture special side wall registers and cold air faces. In fact, everything to complete a system of warm air heating.
We have made it a study for years and never lose sight of quality for the sake of price.
You can trust us to plan or install a Boomer furnace anywhere, and have the assurance that it will work to perfection.
We need your co-operation Write us today.

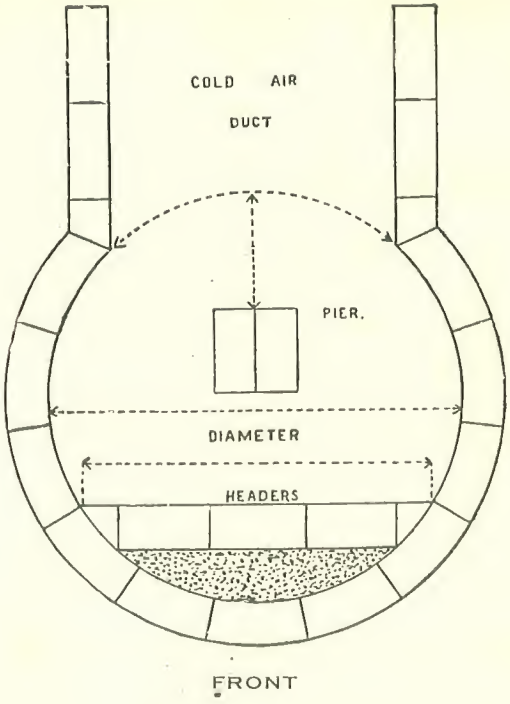
The Cost of a Furnace



Valuable to Those at a Distance Wanting Estimates on Furnace Work. Heating by Circulation

Make rough sketches of the floor plans of your building, giving sizes and heights of rooms to be heated, points of compass, location and size of chimneys, doors, windows, etc. State whether cold air is to be taken from the inside or outside of building; whether above or underneath the cellar bottom. Give height of cellar to bottom of joist. State if any girders are lower than the joist and will interfere with the running pipes. Is the cellar bottom wet or dry? How deep is the drain? Locate the registers in the different rooms, where you would like to have them, keeping in view that the closer to the furnace they are the better they will heat, regardless of where they are located in the rooms. Give us an idea as to the exposure of the building; of what material it is constructed, and in your estimation whether the house would be easy to warm or not. For churches, note location of aisles and pulpits. Upon receipt of the foregoing information, a correct estimate on heating and ventilating can be given.

Foundation Plan and Sizes, Showing How to Start Foundation for Cold Air Pit



Measurements to be taken between the_____marks.

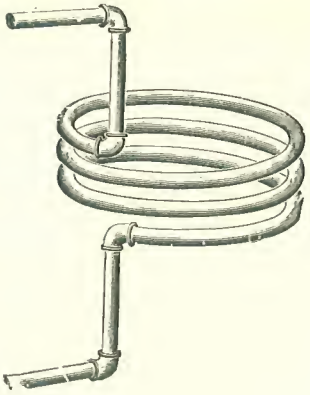
Numbers	Inside Diameter of Pit	Width of Headers	Size of Pier	Distance Between Pier and Back of Pit	Height Between Foundation and Joist No Less Than
71 and 071	40 inches	32 inches	8x 8	10 inches	82 and 72 inches
72 and 072	46 inches	34 inches	8x 8	12 inches	82 and 72 inches
73 and 073	52 inches	38 inches	8x12	13 inches	82 and 72 inches
600 and 60	60 inches	44 inches	8x12	15 inches	87 and 77 inches
600 Low and 60 Low	60 inches	44 inches	8x12	15 inches	80 and 77 inches
350 and 0350	38 inches	28 inches	8x 8	9 inches	82 and 72 inches
381, 0381	39 inches	32 inches	8x 8	10 inches	82 and 72 inches
442, 0442	45 inches	34 inches	8x 8	12 inches	82 and 72 inches
503, 0503	51 inches	38 inches	8x12	13 inches	82 and 72 inches
130 and 220	39 inches	28 inches	8x 8	13 inches	82 inches
131 and 251	43 inches	32 inches	8x 8	14 inches	82 inches
142 and 292	49 inches	34 inches	8x 8	16 inches	82 inches
153 and 333	56 inches	38 inches	8x12	18 inches	84 inches
035	35 inches				72 inches

The above heights are correct for regular height casings and an allowance of 6 inches between furnace and joist.

If possible, 9 inches between furnace and joist would be better; the pipes having more elevation will discharge heat freely.

Hot Water Coils for Boomer Furnaces

Made of ¾-inch Galvanized Pipe



THE COIL as illustrated does not come in contact with the fire direct, but is heated by conduction through inside shell of return flue radiator and is suitable for the following furnaces:

No. 350, 381, 442, 1381, 1442, 0350 and 0442, list price $6.00.
Nos. 503, 60, 1503, 600, 0503 and 60 Low, list price $7.00.

For the following furnaces, water coils come in direct contact with the fire; holes for pipes through main front are indicated, and coils can be placed in furnace at any time without removing the casing:

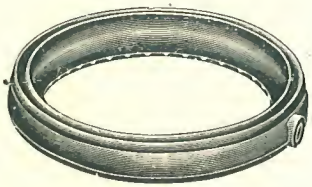
Nos. 71, 72, 73, 74, 071, 072, 073, 191, 193, 195, 318, 320, 322 and 324, list price $2.00.
Nos. 130, 131, 142, 153, 220, 251, 292 and 333, list price $4.00.

See cuts on pages 10, 18, 19, 21 and 22, indicating where coils enter furnace through main front.

To Insert Water Coil

In the front of the furnace, to the left of the feed door, there are two small depressions—use a small punch to punch through the casting, and insert the coil.

Natural Gas Burners for Boomer Furnaces



To take the place of upper fire pot, enabling the operator to use gas and coal at the same time.

For No. 131 Boomer, list price as shown_____$19.00
For No. 142 Boomer, list price as shown _____ 21.00
For No. 251 Boomer, list price as shown _____ 19.00
For No. 292 Boomer, list price as shown _____ 21.00

The removal of the upper fire pot, admits a circular burner to be used for natural gas, allowing coal and natural gas to be used at the same time. This feature will be readily appreciated by persons living in the gas belt who are annoyed by a shortage of gas. At such times they can use the lower part of furnace for coal, and at the same time derive all the benefit possible from the gas. Natural gas burner in halves to set on coal grate can also be furnished.

Chimneys

No furnace made will do good work attached to a poor chimney. A good chimney should start on the cellar bottom and be built perfectly straight, up above the highest point of the house. A separate flue, size 8 in. by 12 in. inside, should be provided for the furnace with no other openings entering said flue excepting the one for the furnace. If the chimney has an offset in it, see to it that the opening is not partially closed up with mortar and broken brick.

Any chimney flue lined with terra-cotta lining is worth much more than the extra cost. The smoke pipe from furnace to chimney should have as much pitch as possible.

An ample flue and a good draft are absolutely essential. In the construction of a new building, these can readily be secured, and this is a matter which should always have careful attention.

In every case, before setting a furnace, see that the flue is clear and without any obstruction. The flue to be used for the furnace should be independent, and must not be used for any other purpose.

Every furnace has a collar to which the smoke pipe must be attached. This collar indicates the size smoke pipe that should be used for that furnace. Be sure that the smoke pipe is tightly connected with the furnace, and also with the flue, and never allow any part of it to be lower than where it leaves the furnace.

Location of Furnace

The proper location of a furnace, as well as the size and distribution of the warm air pipes from the furnace, is one of the most important points pertaining to the successful operation.

In residences where several rooms are to be heated, the furnace should be placed as near the center of all the rooms to be heated as possible.

The registers should be placed in the rooms as near as possible to the furnace, so that the pipes running from the furnace to the register may be short, which will give them more elevation, and assure a better and easier flow of warm air.

Capacities of Pipes and Registers

Round Pipes

Diameter of Pipe	Area in Square Inches	Diameter of Pipe	Area in Square Inches	Diameter of Pipe	Area in Square Inches
8 inches	50	16 inches	201	26 inches	531
9 inches	63	18 inches	254	28 inches	616
10 inches	78	20 inches	314	30 inches	707
12 inches	113	22 inches	380	36 inches	1017
14 inches	154	24 inches	452	46 inches	1661

Registers and Warm and Cold Air Faces

Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches	Size of Opening	Capacity Square Inches
8x10	59	16x20	235	24x30	504
9x12	79	18x21	277	24x36	604
10x12	88	16x28	330	27x27	510
10x14	103	16x32	376	27x38	718
12x14	125	18x36	475	28x28	565
12x15	132	20x24	350	28x32	650
14x16	165	22x26	420	30x30	630
14x20	217	24x27	453	30x36	755
12x30	260	21x29	426	30x42	880
				30x48	1000

Round Registers

Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches	Size of Opening	Capacity in Square Inches
8 inches	33	14 inches	103	24 inches	300
9 inches	42	16 inches	134	30 inches	471
10 inches	52	18 inches	169	36 inches	679
12 inches	75	20 inches	209	48 inches	1205

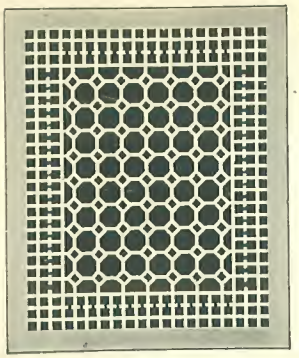
Dimensions of Portable Casings

Diameter of Smoke Pipe and height to bottom of smoke pipe socket

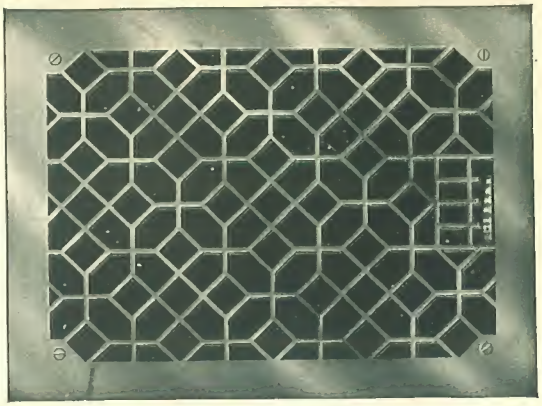
Numbers	OUTSIDE CASING GALVANIZED				INSIDE CASING BLACK			Diameter of Smoke Pipe Inches	Height to Bottom of Smoke Pipe Socket Inches
	Height, Lower Joint Inches	Height, Middle Joint Inches	Height, Upper Joint or W. A. Stubs Hood Section Inches	Diameter Inches	Height, Lower Joint Inches	Height, Upper Joint Inches	Diameter Inches		
191	25 3/4	23 3/4	24	46		30	43	8	41 1/2
193	25 3/4	23 3/4	24	52		28	49	9	40 1/2
195	25 3/4	23 3/4	24	56		28	52	9	40 1/2
318	29 3/4	22	20	40	24	15	37	8	43 1/4
320	29 3/4	22	22	44	24	15	41	8	43 1/4
322	29 3/4	22	22	48	24	15	45	8	43 1/4
324	29 3/4	22	22	52	24	15	49	9	42 1/4
71	29 3/4	23 3/4	18	40	24	18	37	8	45
72	29 3/4	23 3/4	18	46	24	18	43	8 1/2	45 3/8
73	29 3/4	23 3/4	18	52	24	18	49	9 1/2	45 3/8
350	29 3/4	23 3/4	18	38	24	18	35	8	45 3/8
381	29 3/4	23 3/4	18	40	24	18	37	8	45
442	29 3/4	23 3/4	18	46	24	18	43	8 1/2	45 3/8
503	29 3/4	23 3/4	18	52	24	18	49	9 1/2	45 3/8
60	29 3/4	27 3/4	24	60	26	20	57	9 1/2	46
600	30	30	18	60	26	22	57	9 1/2	51 3/4
130	29 3/4	14	26	40	24	16	37	8	49 1/4
131	29 3/4	14	26	44	24	16	41	8 1/2	48 3/4
142	29 3/4	14 3/4	28	50	24	16	47	9 1/2	49 3/8
153	29 3/4	14 1/2	28	56	20	20	53	9 1/2	49
220	29 3/4	16 5/8	20	40	24	16	37	8 1/2	50 3/4
251	29 3/4	16 7/8	20	44	24	20	41	8 1/2	51
292	29 3/4	17 3/4	24	50	24	20	47	9 1/2	53 3/4
333	29 3/4	18 1/4	24	56	24	20	53	9 1/2	54
071	29 3/4	17 3/4	18	40	24	12	37	8	39
072	29 3/4	17 3/4	18	46	24	12	43	8 1/2	39 3/8
073	29 3/4	17 3/4	18	52	24	12	49	9 1/2	39 3/8
0350	29 3/4	17 3/4	18	38	24	12	35	8	39 3/8
0381	29 3/4	17 3/4	18	40	24	12	37	8	39
0442	29 3/4	17 3/4	18	46	24	12	43	8 1/2	39 3/8
0503	29 3/4	17 3/4	18	52	24	12	49	9 1/2	39 3/8
60 Low	29 3/4	20	18	60	26	14	57	9 1/2	40
600 Low	30	23	18	60	26	15 1/2	57	9 1/2	43
Gas 035	30	20	15	35	24	15	32	6	44
Gas 05	30		30	32				6	46 1/2
Gas 03	30		30	24				5	44

Note—By referring to foregoing table, note that the upper joint of outside casing receives hot air pipes. If hot air pipes larger in diameter than the height of this upper joint are to be used, state the diameter of largest hot air pipe, and upper joint of casing will be sent correspondingly higher.

Portable casings are made double, with an air space of 1½ inches between them. This space is unobstructed from bottom to top, allowing a steady, unbroken flow of cold air to pass between the casings, hence discharging less heat into the cellar. Galvanized iron is used for the outside casing, and black iron for the inside casing. The top or cover of casing is galvanized iron with two-inch sand rim, which prevents heat from striking the joist. The casing is drawn tight to front by means of cast iron clamps and machine bolts, making it possible to have it fit absolutely tight on casing rings by drawing up the bolts. **A distinct feature of this casing is that in five minutes it can be made from one to ten inches lower, to suit cellars of different heights, by simply cutting the required amount off of top of W. A. stub section.**



Cold Air Face



Semi-Steel Floor Register

Semi-Steel Floor Registers

	8x10	8x12	9x12	10x12	10x14	12x14	12x15	14x16	16x20	18x21	20x24	24x27	27x27	30x30
Black Japanned	$1.65	1.90	2.10	2.40	3.15	4.35	4.50	8.50	12.35	20.50	22.00	33.95	37.25	49.00
Oxidized Copper	$3.15	3.65	4.00	4.40	5.25	6.85	7.00	11.50	16.55	26.00	28.20	45.00	49.25	65.00
Nickel Plated or Brass Plated	$3.85	4.40	5.10	5.50	6.55	8.25	8.50	16.50	24.60	30.00	39.00	56.00	66.00	85.00

Floor Borders

	8x10	8x12	9x12	10x12	10x14	12x14	12x15	14x16	16x20	18x21	20x24	24x27	27x27	30x30
Black Japanned	$1.25	1.50	1.65	1.75	2.20	2.80	2.90	4.30	6.10	7.75	8.60	14.00	17.00	21.50
Oxidized Copper	$2.75	3.25	3.55	3.75	4.30	5.35	5.40	7.30	10.30	13.25	14.80	25.00	28.00	34.00
Nickel Plated or Brass Plated	$3.90	4.40	5.00	5.35	6.00	7.35	7.60	11.00	14.00	18.00	21.70	29.00	34.00	41.00

Cold Air Faces

	8x10	9x12	10x12	10x14	12x14	12x15	12x30	14x16	14x20	16x20	16x28	16x32	18x21	18x36	20x24
Black Japanned	$1.10	1.45	1.70	2.20	2.80	2.90	8.20	4.30	4.80	6.10	10.00	13.10	7.75	17.25	8.60
Oxidized Copper	$2.60	3.35	3.70	4.30	5.35	5.40	14.20	7.30	8.50	10.30	16.20	20.35	13.25	28.10	14.80
Nickel Plated or Brass Plated	$3.30	4.45	4.80	5.60	6.75	6.90	18.00	11.00	13.00	16.00	22.75	27.50	19.00	36.00	25.50

	21x29	22x26	22x42	24x24	24x27	24x30	24x36	24x45	27x27	28x28	28x32	30x30	30x36	30x42	30x48
Black Japanned	11.60	13.10	27.00	12.00	14.00	17.25	22.00	28.50	17.00	19.00	24.50	21.50	28.50	33.00	39.00
Oxidized Copper	22.20	23.00	43.00	22.00	25.00	29.25	37.50	50.50	29.00	32.50	39.50	37.00	51.00	57.50	68.00
Nickel Plated or Brass Plated	34.00	32.00	53.50	32.50	37.00	41.50	50.30	63.00	44.50	49.00	55.00	56.00	70.00	87.00	94.00

Square Convex Wall Register

Ceiling Faces, Aluminum Bronzed

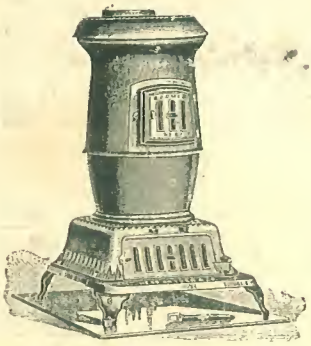
	8x10	8x12	9x12	10x12	12x15	8x10	9x12	10x12	12x15
Black Japanned	$2.40	2.70	3.00	3.75	7.50	1.10	1.45	1.70	2.90
Oxidized Copper	$3.90	4.45	4.90	5.75	10.00				
Nickel Plated or Brass Plated	$5.10	5.75	6.60	7.60	13.00				

Heavy Round Gratings

Borders for Heavy Round Gratings

	30 in.	36 in.	48 in.	30 in.	36 in.	48 in.
Black Japanned	21.50	35.00	60.00	21.50	29.50	45.00

Boomer Cannon Stove



For School Room, Store Room, Factory, Garage, Etc., it is the Heaviest, Strongest and Most Durable Cannon Stove Made

The design of the fire pot for the BOOMER CANNON was originated by us, giving the greatest thickness where the fire is hottest; all others of similar design are imitations.

This stove is so constructed that a sheet iron drum may be attached, and thus increase the heating capacity of the stove.

It is not a direct draft stove, as it contains a smoke plate in top of upper fire pot. It has a large flat top with lid in same. Good joints. Large feed door. Large high ash pan. Shaking and dumping grate in halves. This grate is highly recommended by all users.

As shown by phantom cut can furnish double jackets or casings and attachments, viz: No. 4 with 35 in. casing, No. 5 with 38 in. casing, No. 6 with 40 in. casing.

	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Height	41½ in.	44 in.	46 in.	48 in.	50 in.	50 in.
Fire Pot Top Diameter	14 in.	16	18	20	22	24¼
Fire Pot Bottom Dia.	10	12½	14½	16½	18½	20¾
Grate Diameter	8	10	12	13½	15½	17½
Feed Door Opening	7x8	8x8½	9x9	10x10	10x10½	10x10½
Ash Door Opening	5½x11	5½x13	6x15	6x17	6½x19	6½x21
Weight of Stove	182 lbs.	240 lbs.	300 lbs.	385 lbs.	525 lbs.	575 lbs.
Outside Circumference of Pipe Collar	20½ in.	20½ in.	22 in.	22¼ in.	24 in.	25 in.

Prices quoted upon application.